Open-shelf Inspection Service on Telematic Libraries

Mamoru SATO, Nobuhiko KOIKE, Teruyoshi WASHIZAWA, Juji KISHIMOTO, Yukiyasu SUGURI

Telematique Intl. Res. Lab.
1-5, Minami-Aoyama 7-chome, Minato-ku, Tokyo 107, Japan
phone:+813-498-7241, fax: +813-498-7517

0. Abstract

In the process of automating libraries, the retrieval of books through the browsing of shelves is being overlooked. The Telematic Library is a document based DBMS which can deliver the content of books by simulating the browsing process. The system assists the user in finding information in specific books although initially he has only a general concept of what he is seeking. Visual representations of the books and the library itself are included with the linguistic bibliography. The retrieval actually simulates the process a person would use in selecting a book in a real library where a visual presentation using a graphic display is substituted.

1. Introduction: Pleasure at libraries

It would be sad if the pleasure of using a library is taken away during the process of automating them. Many persons enjoy the action of finding books to read. They obtain new knowledge by browsing through pages of books at the library. In the future, could a computer based system provide such pleasure to the users?

Service concepts

When a user is searching books, there are two situations. One is that he has clear idea of specific books and is searching how to get those. Another is that he has no idea of specific books and is seeking some information to satisfy his curiousity.

Similarly, there are two types of inspection services at real libraries. One is called the "closed shelf service" and another is the "open shelf service". They are associated with the above cases respectively. They are described below.

In the "closed shelf service," the user will retrieve a book using the catalogue only. An important characteristic of this service is the user must have a clear idea of specific information or books to be retrieved.

In the "open shelf service," the user will find books more directly. The user can handle the books, and browse through them. The user may have no specific targeted information or books in this service.
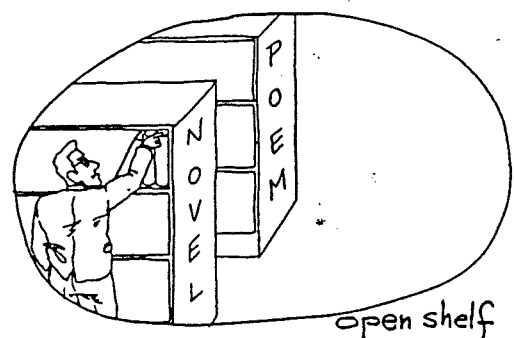
open shelf

Current document retrieval systems are similar to the "closed shelf service." On the contrary, the system described in this paper is similar to the "open shelf service." This system makes the user feel like he is actually in a real library, using computer imaging technologies.

2. Telematic library: an implementation

Now, the computer based library service is not a dream. It should serve not only expert, but also nonexpert users of libraries. The pleasant process of the book finding service will be possible. The open shelf service which is described above, is comfortably able to provide such service. Through looking at the scene of a real library on the graphic display terminal, the user will be able to search for books. Walking among the bookshelves, taking a book from the bookshelf and browsing through the book is possible, using computer graphic/imaging technologies. Currently, we are making a prototype of such a telematic library, whose features are described below.

Objects

Books are the target of basic element in this system. Each book has three components. First is the bibliography of the book. Second is a scanned image for the cover of the book. Third is the whole content of the book.

The bibliography is based on the Japan/MARC in this system. The cover is a color still image scanned by video camera. The contents are able to be handled by a media where the text, graphics or pictures are similar to the Office Document Architecture.

Bookshelves contain plural books and bookshelf images. There are two types of bookshelves for the different collection methods.

First, books are arranged according to the rule of bibliography. For example, the user can see the bookshelf containing the works of Sartre which have been published in Japan. The bookshelves are able to be dynamically generated, if the user makes a clear expression of which bibliography he intends to search.

Second, books are collected by the enumeration for more sophisticated grouping. Using this, a user may have personal bookshelves in this system.

Also, there are bookshelves which can contain both of the above types.

Telematic library tour

In the telematic library, the user will see the entrance of library which is displayed on the video display at first. The user can go into this library and select the direction of progress by use of a mouse. The scenes are continuously changed to make the user feel that he is in a real library. The user will enter the room which is filled by the bookshelves. On these bookshelves, the user will find a number of pictures of the covers of books. These pictures are used for the representations of books, instead of text. The user can advance closer to a bookshelf in order to see the covers of books in more detail. When the user wishes to browse through a book, the user may pick up the face of book using the mouse. The opened book will be displayed, and the user can change pages by mouse operations. If he wants to read a printed page, he can get a hardcopy produced by a color printer. If he doesn't wish to geet a copy of the page, the user can go back to the previous position, and can go to the front of the another bookshelf or another room.

3. Current status:

We are using four computers for managing library, bibliograpy, covers and contents of books respectively. They are connected by the Ethernet. We have three large displays for showing the scenery and an image processor for making the scenes. The magneto-optical disk is used for archiving images of the covers, bookshelve or library's architectures.

SOUNDS

Sp.

Sp.

70 inches Display

70 inches Display

70 inches Display

SUN OCR

OUT IN

Color render

Color printer

memory

VAX 8600

Sp.

Video

8

SUN micro film

SUN optical disks

SUN bibli- ography

PIXAR image processing

symbolics
·human interface
·knowlede base

OUT OUT OUT

IN

Disc

magneto-optical R/V Disc (video)

Ethernet

Video Camera

tablet mouse etc.